Reading Routine Urine Cultures

PURPOSE This procedure is a standardized format for reading, evaluating, and reporting routine urine cultures.

SCOPE This procedure is to be used with the M403 Microbiology Augmentation Set.

PROCEDURE

Voided and catheter urine specimens are inoculated to a blood agar plate (BAP) and a MacConkey (MAC) plate using the 0.001 calibrated loop. Urine culture plates are incubated for 24 hours at 35° C in ambient air.

NOTE: (1) Refer to U 601 for calculating colony counts, and (2) Refer to U 402 for organism identification and susceptibility requirements.

A. No Growth

STEP	ACTION
1	If there is no growth after 24 hours incubation, discard plates.
2	Final report: No growth at 24 hours.

B. Growth on plates: 1-10 colonies

(represents 1000-10,000 cfu/ml)

NOTE: A colony count is reflective of one organism. Each organism has its own colony count. Do not use a total cumulative count when more than one organism is isolated.

STEP	ACTION
1	**PURE GROWTH:** For **clean catch or voided urine** discard plates. Final report: less than 10^4 cfu/ml. For **catheter urine** hold plates and consult with OIC or NCOIC. Final report: Less than 10^4 cfu/ml.
2	**MIXED GROWTH CONSISTENT WITH SKIN FLORA:** For **clean catch or voided urine** discard plates. Final report: Less than 10^4 cfu/ml mixed skin flora. For **catheter urine** hold plates and consult with OIC or NCOIC. Final report: Less than 10^4 cfu/ml.

C. Growth on plates: 10-100 colonies
(represents >10,000 cfu/ml)

STEP	ACTION
1	**PURE GROWTH:** Identify organism according to Gram stain reaction and colonial morphology. Perform antimicrobial susceptibility if indicated. Final report: $>10^4$ cfu/ml organism ID. Report antimicrobial susceptibility results.
2	**TWO ORGANISMS ISOLATED:** (NOT consistent with mixed skin flora) Identify both organisms according to Gram stain reaction and colonial morphology. Perform antimicrobial susceptibility testing if indicated. Final report: $>10^4$ cfu/ml organism ID #1 Report antimicrobial susceptibility results. $>10^4$ cfu/ml organism ID#2 Report antimicrobial susceptibility results.
3	**THREE OR MORE ORGANISMS ISOLATED:** (NOT consistent with mixed skin flora) No further work-up is required. Hold plates and consult with OIC or NCOIC. Final report: $>10^4$ cfu/ml, Three or more organisms isolated, none predominating.
4	**CONSISTENT WITH SKIN FLORA:** For **clean catch or voided urine** discard plates. Final report: $>10^4$ cfu/ml mixed skin flora. For **catheter urine** hold plates and consult with OIC or NCOIC. Final report: $>10^4$ cfu/ml mixed skin flora.

D. Growth on plates: Greater than 100 colonies
(Represents >100,000 cfu/ml)

STEP	ACTION
1	**PURE GROWTH:** Identify organism according to the Gram stain reaction and colonial morphology. Perform antimicrobial susceptibility testing if indicated. Final report: $>10^5$ cfu/ml organism ID Report antimicrobial susceptibility results.
2	**TWO ORGANISMS ISOLATED:** (NOT consistent with mixed skin flora) Identify both organisms according to the Gram stain reaction and colonial morphology. Perform antimicrobial susceptibility testing if indicated. Final report: $>10^5$ cfu/ml organism ID #1 Report antimicrobial susceptibility results. $>10^5$ cfu/ml organism ID #2
3	**THREE OR MORE ORGANISMS ISOLATED:** (NOT consistent with mixed skin flora) No further work-up is required. Hold plates and consult with OIC or NCOIC. Final report: $>10^5$ cfu/ml, 3 or more organisms isolated, none predominating.
4	**CONSISTENT WITH SKIN FLORA:** For **clean catch or voided urine** discard plates. Final report: $>10^5$ cfu/ml mixed skin flora. For **catheter urine** hold plates and consult with OIC or NCOIC. Final report: $>10^5$ cfu/ml mixed skin flora.

E. Referring Cultures

STEP	ACTION
1	A subsequent culture(s) on the same patient that grows an organism morphologically similar to the previously identified organism(s) may be referred to the finalized culture if received within one week period.
2	The name of the organism cannot be used on the subsequent culture since identification has not been performed. Example: $>10^5$ cfu/ml lactose fermenting gram negative rod, refer to culture _____. $>10^5$ cfu/ml oxidase positive, non-lactose fermenting gram negative rod, refer to culture _____.
3	If the time period exceeds one week report the ID and antimicrobial susceptibility as appropriate.

REFERENCES

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Howard, Barbara J., Clinical and Pathogenic Microbiology, C.V. Mosby CO., Washington, D.C., 1994, pp. 236-238.

Isenberg, H.D. ed., Essential Procedures for Clinical Microbiology. ASM Press, Washington, D.C., 1998